

a shell and operculum under the name of *D. leithii* from California, where it has not since been recognized, but probably is a Lower Californian shell.

Alaba supralirata Carpenter, was described in the Mazatlan Catalogue and is an abundant Lower Californian shell. An examination of a dry specimen shows it to have an operculum paucispiral and like that figured for *Diala leithii* Smith, with no spur or outstanding spiny process. The radula is not quite like that figured by Troschel. The rhachidian tooth has a squarish base with three rounded cusps, the central one larger than the others. The extreme minuteness of the object and the tangled condition of the radula did not enable me to determine the form of the stems of the inner laterals, but the outer ones and apparently the others were slender, the distal ends forming a semi-circular curve with extremely fine serrations on the edge. The radula and operculum of *Alaba* have not previously been described.

The shell listed by Carpenter as *Diala marmorea* though shaped and colored like some of Adams' Dialas, does not belong to the genus. It has the operculum and radula of *Barleeia* but differs in having a smooth nucleus while that of *Barleeia rubra* is thimble-pitted. The rhachidian tooth of *marmorea* is more squarish than that of *B. rubra* as figured by Troschel, and has five rounded cusps, the middle one larger. The styliform process of the operculum is remarkably long in proportion to the size of the operculum. Whether the difference in the nuclei warrants a distinctive name for *B. marmorea* need not now be decided.

OBSERVATIONS ON LIVING GASTEROPODS OF NEW ENGLAND

By Edward S. Morse, Peabody Museum, pp. 1-29, plus. 1-IX.

BY PAUL BARTSCH

Two years ago Professor Morse published his paper "Observations on Living Lamellibranchs of New England", in the Proceedings of the Boston Society of Natural History, (Vol. XXV, No. 5) in which forty-eight species are described and figured.

The present paper is a companion to that one, dealing with Gastropoda and one Scaphopod. Forty-six forms are figured in the 118 sketches, on nine plates illustrating the paper. The first twenty-two pages are given to a discussion of the anatomic structures figured, while the last seven are devoted to an arraignment of modern nomenclatorial methods.

It is interesting to note that of the forty-six species figured, ten bear names that were originally bestowed upon East Atlantic specimens. These species were later recognized as existing in American waters. Experience has taught me to look upon such a distribution with a critical eye, and for that reason I have subjected, in this instance, these ten species to an examination, comparing our splendid collection of East American specimens with the fine lot of material contained in the famous Jeffreys Collection of European Mollusca now resting in the National Museum, with the following results:

Figure 2, *ACMAEA TESTUDINALIS* Müller. The American shells average much larger than the European. Some of the specimens actually attain more than double the size of the largest contained in the Jeffreys Collection. There are other essential differences in color pattern, etc., enough, I should say, as *Acmaeas* go, to separate the American from the European form, at least subspecifically. We may therefore call it *Acmaea testudinalis amoena* Say, a name that was bestowed upon the American species by Say in 1821, Journ. Acad. Nat. Sci. Phila., vol. 2, p. 223.

Figure 8, *CEMORIA NOACHINA* Linnaeus. The American shell has long since been recognized as distinct from the European, under the name of *Puncturella princeps* Mighels & Adams, Bost. Journ. Nat. Hist., vol. 4, p. 42, 1842.

Figure 14, *LACUNA VINCTA* Montagu. An examination of the East and West Atlantic specimens passing under this name shows that there are sufficient differences in the form of shell, shell texture and finer sculpture to separate the West Atlantic from the East Atlantic form, at least

subspecifically. The name available for the West Atlantic will be *Lacuna vineta pertusa* Conrad, Journ. Acad. Nat. Sci. Phila., vol 6, p. 266, 1829.

Figure 20, *MENESTHO ALBULA* Moller. The specimens referred to under this name are not that species, but *Couthouyella striatula* Couthouy.

Figure 21, *VELUTINA LAEVIGATA* Linnaeus, and Figure 23 *LAMELLARIA PERSPICUA* Linnaeus I do not know.

Figure 34, *BUCCINUM UNDATUM* Linnaeus. This species was described from Europe. As at present conceived it is a most variable form and will require intensive anatomic study and breeding to decide whether we are dealing with a fluxed hybrid element, or whether this name is made to cover a host of species. With the present state of our knowledge it would be folly to attempt a differentiation of the American from the European forms.

Figure 39, *TROPHON CLATHRATUS* Linnaeus. The size, shape and sculpture differentiate the American from the European form. The West Atlantic members will have to be called *Trophon scalariformis* Gould, Invert. Mass., p. 378, 1870.

Figure 44, *ALEXIA MYOSOTIS* Draparnaud. More detailed anatomic study will have to be made before we can be sure that the European species is really the same as the American.

A bit of rectification, where needed, of the rest of the nomenclature may not be out of place, and I am sure that Professor Morse will be only too glad to have someone relieve him of this task, so we give the following:

Figure 1, *ENTALIS STRIOLATA* Stimpson is now *Dentalium (Antalis) entale stimpsoni* Henderson.

Figure 11, *TROCHUS OCCIDENTALIS* Mighels & Adams. This is *Calliostoma occidentale* Mighels & Adams.

Figure 13, *RISSEA MINUTA* Totten is *Paludestrina minuta* Totten.

Figure 24, *NATICA HEROS* Say.

Figure 25, *NATICA TRISERIATA* Say.

- Figure 27, NATICA IMMACULATA Totten; all three must be referred to the genus *Polinices*.
- Figure 29, BELA DECUSSATA Couthouy becomes *Lora decussata* Couthouy.
- Figure 30, COLUMBELLA LUNATA Say becomes *Alia lunata* Say
- Figure 31, COLUMBELLA AVARA Say becomes *Anachis avara* Say.
- Figure 32, NASSA OBSOLETA Say becomes *Alectrion (Ilyanassa) obsoleta* Say.
- Figure 33, NASSA TRIVITTATA Say becomes *Alectrion (Tritia) trivittata* Say.
- Figure 35, BUCCINUM CINEREUM Say is now *Urosalpinx cinerea* Say.
- Figure 36, FUSUS ISLANDICUS Gmelin. This should bear the name *Colus stimpsonii* Mörch. It is interesting, in this connection, to call attention to the fact that an error has slipped into Johnson's "Fauna of New England", in his citation under this species on page 137. He cites the type locality as as Faerö. The fact is, Mörch states at the reference cited that *Fusus stimpsonii* (*F. corneus* Say, Amer. Conch.), is the American species; that the Faerö specimens differ from it, are thinner shelled, and have flatter whorls than *F. stimpsonii*. Say misidentified this as the *corneus* of Linnaeus.
- Figure 37, FUSUS PYGMAEUS Gould is *Colus pygmaeus* Gould.
- Figure 38, FUSUS DECEMCOSTATUS Say is now *Chrysodomus decemcostatus* Say.
- Figure 41, RANELLA CAUDATA Say is now known as *Eupleura caudata* Say.
- Figure 46, MELAMPUS BIDENTATUS Say is now generally considered to be *Melampus lineatus* Say.

There have been so many changes and so much discussion in the preceding remarks that it might seem as if Professor Morse's paper had been criticised. I wish here to dispel any such impression. All that we have attempted is to bring up to date an involved nomenclature that will render his contribution the more intelligible to those who do not have the mass of literature necessary to effect these needed changes.

Professor Morse's drawings and anatomic notes will be always extremely useful, since they add materially to the sum total of our knowledge of our northeastern mollusks, and it is only to be hoped that Professor Morse will continue to employ the wonderful gift which he possesses to fix on paper observations on all the other forms with which he will come in contact in the future.

The only criticism in the entire paper pertains to figure 18, that of *Aporrhais occidentalis* Beck, in which an appendage is described which is evidently an abnormality, a curious accidental development, which Professor Morse himself tells me in a letter is the case, although he did not recognize it as such when he prepared his manuscript.

As to the appendix, pp. 23-29, we agree with Professor Morse that it is an arduous task to keep pace with the ever shifting nomenclature. Some of the changes produced might be dispensed with, but the major part reflects the advance of our knowledge, and is necessary. I have recently had occasion, in revising the Vitrinellidae, to refer specimens that had been assigned to this family at various times, to six other families than the Vitrinellidae, their operculum, radula and other anatomic features demanding this shifting. Changes like these will continue to be required until the final adjustment has been made.

We in the Government offices are constantly called upon to furnish the very latest in nomenclatorial dictum and a large part of our time is taken up with the chase after the correct name. I have frequently wished that some organization could be prevailed upon to undertake the preparation of a card catalog of scientific names, generic and specific, beginning with Linnaeus, giving in addition to the name and citation of publication, the family to which a given genus belongs and for species in addition the type locality. In the case of secondary combinations, a cross-reference card should be prepared for filing under the proper places. Such a work carefully executed would eliminate at once almost all the changes in nomenclature due to priority only, the names, that seem to irritate most grievously the men who are not actually engaged in revisional work.

The reviser usually has only one aim, or should have only one aim in mind, and that is to achieve stability by applying the rules of the international code consistently, no matter how much he may dislike to so do. No nomenclatorial stability can be achieved if each of us follows an independent method. A catalog of the kind above referred to would make a quick revision possible, the main points of which would stand for a long time to come, and the minor shift could easily be kept current by the small force that should prepare the cards for the new things published year by year. I wish to heartily recommend this undertaking to the National Research Council. I am sure that the whole zoological fraternity, yes, not only zoological but botanical fraternity, would be grateful for such a work.

Another point that should find expression in this review is the fallacy, or should I say dogma, entertained by many that the soft anatomy of mollusks expresses more nearly the true phylogenetic relationship than does the shell. It has come to be believed, why I do not know, that shell characters are readily modified, and that the soft parts only remain constant. The facts adduced by our breeding of *Cerions* do not accord with this. Here, at least, we have found the shell characters not affected by changed environment. By hybridization we have produced not only changes in shell characters but even greater changes in the organization of the soft parts. This would show that the soft parts are at least as readily changeable, if not more so, than the skeletal characters. Furthermore, we should not lose sight of the fact that the gastropod shell, in its nuclear whorls, retains a lot of embryologic and subsequent metamorphic developmental history which is largely, if not entirely, lost in the adult anatomy of the animal. The shell therefore furnishes ever so much more phylogenetic information than the adult soft parts, since it records almost the complete ontogeny of the species. No single set of characters tells the whole story—shell, cytology, embryology, anatomy, not to forget physiology, all furnish helpful hints to a complete understanding, and Professor Morse's notes and figures will prove exceedingly useful to all of us who may not have ready access to living material.